



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Liu et al.
Serial No. : 10/590,536
Filed : August 25, 2006
Cust. No. : 20985
Title : METHOD FOR PREDICTING DE NOVO BIOMACROMOLECULE
CRYSTALLIZATION CONDITIONS AND FOR CRYSTALLIZATION OF
THE SAME

Art Unit : 1645
Examiner : Unassigned
Conf. No. : 9783

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

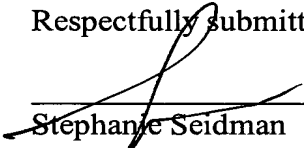
TRANSMITTAL LETTER

Dear Sir:

Transmitted herewith are an Information Disclosure Statement (2 pages), Forms PTO-1449 (1 page), cited non U.S. patent references and a return postcard for filing in connection with the above-identified application. Because this Information Disclosure Statement is filed prior to receipt of a first office action on the merits in the above-referenced application, no fee is due. However, should it be determined that a fee for filing these papers is required, the Commissioner is authorized to charge Deposit Account No. 06-1050, as stated below:

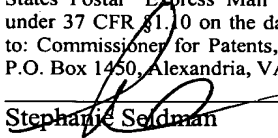
- ☒ The Commissioner is hereby authorized to charge any fees that may be due in connection with this paper or with this application during its entire pendency to Deposit Account No. 06-1050. A duplicate of this sheet is enclosed.

Respectfully submitted,


Stephanie Seidman
Reg. No. 33,779

Attorney Docket No. 08625-007US1/2507US
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CERTIFICATE OF MAILING BY "EXPRESS MAIL"
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I hereby certify that this paper is being deposited with the United States Postal "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA, 22313-1450.


Stephanie Seidman



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**INFORMATION DISCLOSURE STATEMENT IN ACCORDANCE
WITH 37 C.F.R. §§ 1.97-1.98**

Because this Information Disclosure Statement is filed before the receipt of a First Office Action on the Merits for the above-captioned application, a fee for filing this statement should not be due. If, however, it is determined that a fee is due, any fees that may be due in connection with filing this paper may be charged to Deposit Account No. 06-1050.

In accordance with the duty of disclosure imposed by 37 C.F.R. §1.56 to inform the Patent Office of all information known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant's representative hereby provides this Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§1.97-1.98. Forms PTO-1449 (1 page) and copies of the cited non U.S. Patent documents are provided herewith.

The documents cited on the Forms PTO-1449 are in the English language. Hence, in accordance with the requirements of 37 C.F.R. §1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

Although these documents are made known to the Patent and Trademark Office in compliance with Applicant's duty of disclosure, such disclosure is not to be construed as an admission by Applicant or Applicant's representative that any information, singly or in any

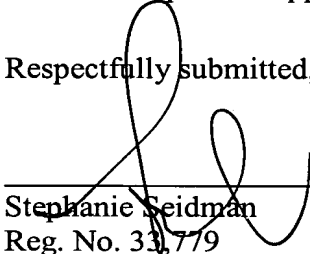
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Stephanie Seidman

combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. §1.97(h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(b) exists.

Applicant respectfully requests that the Examiner review the foregoing documents and they be made of record in the file history of the above-captioned application.

Respectfully submitted,



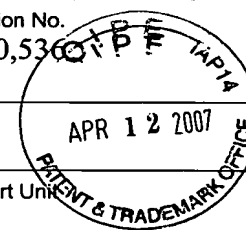
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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 08625-007US1/2507US	Application No. 10/590,536
List of Patents and Publications for Applicant's Information Disclosure Statement (37 CFR §1.98(b))		Applicant Liu et al.	
		Filing Date August 25, 2006	Group Art Unit 1645



U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	none					

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AB	2005/080422	09/01/05	PCT				

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	AC	Agena, S.M., et al., "Protein solubility modeling," Biotechnology and Bioengineering, 64:144-150, (1999).
	AD	Bonnete, F., et al., "Second virial coefficient variations with lysozyme crystallization conditions, Journal of Crystal Growth, 196:403-414, (1999).
	AE	Chiew, Y.C., et al., "Molecular thermodynamics for salt-induced protein precipitation," American Institute of Chemical Engineering, 41:2150-2159, (1995).
	AF	Curtis, R.A., et al., "Hydrophobic forces between protein molecules in aqueous solutions of concentrated electrolyte," Biophysical Chemistry, 98:249-265, (2002).
	AG	Curtis, R.A., et al., "Protein-protein and protein-salt interactions in aqueous protein solutions containing concentrated electrolytes," Biotechnology and Bioengineering, 57:11-21, (1998).
	AH	Du, N., et al., "Aggregation of antifreeze protein and impact on antifreeze activity," the Journal of Physical Chemistry. B, Materials, surfaces, interfaces & biophysical, 110(41):20562-20567, (2006).
	AI	George, A., and W. Wilson, "Predicting protein crystallization from a dilute solution property," Acta Crystallographica. Section D, Biological Crystallography, 50:361-365, (1994).
	AJ	Graham, D.E., and M. C. Phillips, "Protein at liquid interfaces I: kinetics of adsorption and surface denaturation," Journal of Colloid Interface Science, 70(3):403-414, (1979).
	AK	Jia, Y. and X. Liu, "From surface self-assembly to crystallization: prediction of protein crystallization conditions," the Journal of Physical Chemistry. B, Materials, Surfaces, Interfaces & Biophysical., 110(13):6949-6955, (2006).
	AL	Jia, Y., et al., "Investigation on the mechanism of crystallization of soluble protein in the presence of nonionic surfactant," Biophysical Journal, 89(6):4245-4251, (2005). Epub 2005 Sep 23.
	AM	Neal, B.L., et al., "Why is the osmotic second virial coefficient related to protein crystallization?" J. Crystal Growth, 196:377-387, (1999).
	AN	Subirade, M., et al., "Effect of dissociated and conformational changes on the surface behavior of pea legumin," Journal of Colloid Interface Science, 152(2):442-454, (1992).
	AO	Sun, W.Q. and P. Davidson, "Protein inactivation in amorphous sucrose and trehalose matrices: effects of phase separation and crystallization," Biochimica et Biophysica Acta, 1425(1):235-244, (1988).
	AP	Tornberg, E., "The application of the drop volume technique to measurement of the adsorption of protein at interfaces, Journal of Colloid Interface Science, 64(3): 391-402 (1978).

Examiner Signature	Date Considered
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	